Letter Work Plans and FSP Reviews/Approvals Process
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Hi Steve.

Attached is EPA's markup of the first several sections of the FSP. I had to stop when it became apparent the FSP needs to be updated consistent with the most recent letter work plans (including the objectives in the most recent letter work plans) and any other outstanding comments EPA might have, although I'm hoping we can get the groundwater, geophysical and leachate work plans approved soon. But this will at least get you started - although there are not too many changes.

What I propose is to have EPA/OEPA take one last look at the geophysical, leachate and groundwater letter work plans - in that order - and let me know if there are any last comments or if we can approve them. I asked reviewers that if they believe any information/technical details are missing, let's assume these will be provided in the FSP or SOPs so we can get the letter work plans finalized as is without having to keep re-working them.

Once we approve or are close to approving each letter work plan I will send it to you and ask CRA to revise the FSP consistent with today's markups, the letter work plan EPA approved/any last comments, and to make sure EPA has all the technical procedures and details we need in the FSP/SOPs, at least for each approved or almost-approved work plan investigation. Then we can review the FSP and make sure that all the sampling details/procedures we need are either in the letter work plan and/or the FSP/SOPs for that investigation, and that they don't conflict.

I will be out of the office Thursday and Friday but back in on Monday if you have any questions or would like to discuss this further. Hopefully we are close to at least wrapping up the most recent revised letter work plans you sent.

I will look at the geophysical, leachate and groundwater letter work plans and then start working on the QAPP. Thanks again for CRA's efforts in working through this process with EPA as quickly as possible.

Thanks, Karen.

- Land Survey, Bathymetry Survey, and Geophysical Investigation Letter Work Plan (CRA, March 14, 2008) provided as Appendix J-A;
- Leachate Seep Investigation Letter Work Plan (CRA, March 13, 2008) provided as Appendix J-B;
- Test Pit/Test Trench Investigation Letter Work Plan (CRA, March 17, 2008) provided as Appendix J-C;
- Landfill Gas/Soil Vapor Investigation Letter Work Plan (CRA, March 14, 2008) provided as Appendix J-D; and
- Groundwater Letter Work Plan (CRA, March 12, 2008) provided as Appendix J-E.

The investigative tasks are discussed in detail in the individual Letter Work Plans.

~~The investigative activities are planned to be completed in phases, as defined in the Statement of Work (SOW) dated March 13, 2006, which is attached to the Administrative Settlement Agreement and Order on Consent (ASAOC). The FSP includes procedures for current and future investigative activities contemplated for the Site. The FSP provides the detailed sampling and data gathering methods that will be used as part of proposed and potential future investigations to be conducted at the Site. The FSP also identifies the Site specific objectives of the investigative activities, detailed objectives of each investigation, and the data quality objectives (DQOs). If appropriate, the FSP will be modified during the investigation process to incorporate new information and refined process objectives.~~

The FSP incorporates ~~draft~~ comments received from USEPA on January 29, 2008.

J.1.1 ASSOCIATED DOCUMENTS

All activities discussed in this Field Sampling Plan will be performed in accordance with the Quality Assurance Project Plan (QAPP, CRA, March 2008) and Health and Safety Plan (HASP, CRA, March 2008).

- June 2002 VOCs
- July 2004 VOCs
- October 2004 VOCs
- August 2005 VOCs

The groundwater analytical data are presented in Table 2.5 of the draft RI/FS Work Plan along with Ohio EPA's and PSARA's data. Table 2.5 of the draft RI/FS Work Plan also depicts those parameters that were not analyzed for in a given sample collection round.

PFI sampled surface water and sediments at the Quarry Pond during April 1999 and May 2000. PFI collected three surface water samples during each sampling event using a Bacon Bomb sampler, and three sediment samples during each event using an Ekman Dredge. PFI analyzed the samples for VOCs and also analyzed the April 1999 sediment samples for total organic carbon (TOC).

J.1.6.7 SUMMARY OF RESULTS OF PFI INVESTIGATION

Based on the PFI results, groundwater quality at the Site has been impacted by chlorinated solvents, and inorganic chemicals including, but not limited to, arsenic and lead. ~~The source of the contamination is unknown but may originate from Site activities, activities at neighboring properties, or contamination in recharging surface water~~. In particular, TCE has been detected consistently in groundwater samples from wells completed on the eastern (MW-202 and MW-210) and western (MW-201) boundaries of the Site. TCE has also been detected on occasion in groundwater samples from MW-102 and MW-208, also located at the western and eastern margins of the Site, respectively~~. The source(s) of the chlorinated solvents will be investigated during the investigative activities detailed in this FSP and Letter Work Plans.~~

PFI noted that breakdown products from the degradation of TCE (1,2-DCE and VC) have been consistently detected in groundwater samples collected from MW-101A (south-central portion of the Site). 1,2-DCE has also been consistently detected in groundwater samples collected from MW-210 at the southeast corner and once in groundwater samples from MW-202 on the eastern margin of the Site. 1,2-DCE and VC have been detected on occasion in groundwater samples from MW-203 and MW-208 at the southern and eastern margins of the Site, respectively. However, as noted by USEPA, the presence of these "daughter"

compounds could be attributed to co-solvent deposition rather than degradation.

In addition, PFI also noted that 1,1,1-TCA and its potential breakdown products have been detected in groundwater samples collected from monitoring wells installed at the Site. The presence of both parent and daughter compounds may ~~be a strong indicator~~ indicate that natural attenuation is occurring at the Site. As noted above, the mere presence of these compounds does not definitively mean that biodegradation is occurring or that biodegration and natural attenuation are effective remedial processes. ~~The i~~Investigative activities ~~will need~~ would be needed to evaluate this line of evidence further.

~~The data for natural attenuation parameters provide additional evidence that natural attenuation is occurring. Significant observations related to the parameters are:~~

~~1. MW-201 samples reducing conditions evident and indicator byproducts present;~~

~~2. MW-204 samples reducing conditions evident and indicator byproducts present; and~~

~~3. MW-210 samples reducing conditions evident, different quality than recharge water, elevated sulfate and chloride.~~

~~These data support the conclusion that natural degradation of the chlorinated VOCs is occurring. This phenomenon, which is common in landfills, will be evaluated further in the RI.~~ ***THESE PARAGRAPHS DELETED BASED ON EPA RI/FS WORK PLAN COMMENT NO. 146.***

PFI also collected sediment and surface water samples from the Quarry Pond. PFI noted that two of the three sediment samples contained TOC (although the presence of TOC may or may not be evidence of impact) and none of the surface water or sediment samples contained detectable concentrations of VOCs.

Notwithstanding the above discussion, PFI noted that seasonal fluctuations in water table depth can cause variations in groundwater flow direction(s) and hence may affect groundwater quality at a given monitoring well location. Repeated sampling events, scheduled to coincide with the variations in flow

no intact drums or complete drum carcasses were excavated nor were any complete drum carcasses observed in the side walls of the excavation.

In January 2006, Ohio EPA visited the Valley Asphalt property to determine the status of the two water wells that were reported by TCA in their 2000 Environmental Report. The report stated that TCA sampled the wells, but did not detect any VOCs in the water samples. One of these two wells was identified on a sketch in the TCA report. This well, situated approximately 50 feet southwest of the drum excavation, was located by Ohio EPA on January 20, 2006, next to what appears to be a truck-wash area. Its location suggests it is potentially down gradient of the 2000 excavation. Ohio EPA meeting notes with TCA dated May 31, 2000 state that this well was used minimally for sanitary purposes; however, during reconnaissance on January 20, 2006, Mr. Hutch Rogge, project manager of John R. Jurgensen Co. (owner of Valley Asphalt), stated that he thought the well provided drinking water to the main office.

Upon inspecting the well, Ohio EPA noted that the well lacked a protective cover or sealing cap. The well casing was covered with a plastic bag. A large diameter concrete pipe surrounded the protective casing. The annular space was filled with trash, including a spray can. The employees were not familiar with any other wells located on the property.

J.1.7 BASIS

~~. This FSP was prepared in accordance with the SOW. The FSP identifies specific problem statements for each investigation, objectives of each investigation, and the required DQOs~~. The FSP defines and details the field sampling and data gathering activities required to collect the necessary data to complete the work described in the five Letter Work Plans submitted to USEPA in March 2008. ~~The information collected through these sampling programs will allow the USEPA and the PRP Group to determine which portions of the Site are appropriate for a streamlined FS. As identified in Section 1.2.1 of the SOW, the following objectives were to be met during the investigative activities in order to evaluate and characterize Site conditions:~~ This work includes:

- ~~Geophysical Survey;~~
- ~~Install nine test trenches;~~

- ~~Install four test pits;~~
- ~~Conduct Geoprobe shallow groundwater investigation;~~
- ~~Install three shallow piezometers;~~
- ~~Install new shallow groundwater monitoring wells;~~
- ~~Vertical aquifer sampling (VAS);~~
- ~~Install three new deep groundwater monitoring wells;~~
- ~~Install two contingency deep groundwater monitoring wells if necessary;~~
- ~~Collection of five soil samples for geotechnical analysis;~~
- ~~Collection of one surface soil sample and one subsurface soil sample at each new monitoring well or probe location;~~
- ~~Install five landfill gas probes;~~
- ~~Install 10 surface water gauges;~~
- ~~Survey topography, all existing and new monitoring wells, all new and existing piezometers, surface water gauges, and land fill gas probe locations;~~
- ~~Groundwater and surface water sampling;~~
- ~~Landfill gas sampling;~~
- ~~Levee inspection;~~
- ~~Seep inspection;~~
- ~~Bathymetry Survey of the Quarry Pond; and~~
- ~~Wetlands delineation.~~

~~Based on discussions between the PRP Group and the USEPA, the Letter Work Plans have revised and refined this set of objectives to include the following specific tasks and associated objectives:~~

- Land survey, Bathymetry Survey, and Geophysical Investigation to meet the following objectives:
  - conduct a topographical survey by aerial photometry;
  - survey locations of existing structures and features;
  - establish benchmarks for future surveying;
  - generate a current Site plan and an accurate topographical map of the Site;
  - complete surficial metallic debris collection and staging;
  - complete a bathymetry survey of the Quarry Pond to generate

topographical information for the bottom of the Quarry Pond and information for use in future investigation and remedial action alternatives;

- complete a geophysical survey to identify buried metal and objects at the Site and identify Site areas which may require additional investigation;

- Leachate Seep Investigation to meet the following objectives:
  - completion of a seep inspection to identify seeps;
  - potentially characterize seeps observed along Site embankments; and
  - identify any areas that may require further investigation;
- Test Pit/Test Trench Investigation to meet the following objectives:
  - collect data to assist in identifying the nature and delineating the extent of various types of landfilled materials above the water table;
  - collect data to assist in characterizing leachate from unsaturated landfilled material;
  - assess areas of the Site previously identified as specific areas of concern (i.e., Valley Asphalt drum removal area and UST area; Custom Delivery UST area; Lot 4423, etc.); and
  - identify Site areas, which may require further investigation (for example leachate sampling and analysis, groundwater quality investigation, or other delineation work);
- Landfill Gas/Soil Vapor Investigation to meet the following objectives:
  - assess the presence of and generation potential for landfill gas (LFG) and soil vapor within and adjacent to the Site;
  - obtain current data in locations where historic information indicated potential LFG generation concerns;
  - develop sufficient information to calculate future landfill gas generation rates; and
  - develop sufficient information to evaluate the need for and type of landfill gas control at the Site; and
- Groundwater Investigation to meet the following objectives:
  - define subsurface stratigraphy, including identifying till-rich zone(s) and sand and gravel aquifer zone(s) beneath the Site using rotosonic drilling;
  - collect data to assist in characterizing groundwater impacts and select locations for monitoring wells through vertical aquifer sampling (including evaluation of the existing monitoring wells);
  - characterize groundwater chemistry through sampling Site monitoring wells; and